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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/343,334	06/30/99	SKLEDAR G	T-5586CIP

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EXAMINER	
PREISCH,N	
ART UNIT	**PAPER NUMBER**
1764	4

DATE MAILED: 09/08/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/343,334	Skledar et al.
Examiner	**Group Art Unit**
Nadine Preisch	1764

☒ Responsive to communication(s) filed on *Jun 30, 1999* .

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *3* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) *1-28* is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *1-28* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐approved ☐disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____ .

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____ .

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

DETAILED ACTION

Claim Rejections - 35 U.S.C. § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 25 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention.

In claim 25, applicants use the phrase "...hydrogenating polyolefin to a level of hydrogenation in which an RBOT level .....is achieved when diphenyl amine is used as an antioxidant". The claim is indefinite because it is unclear as to how the antioxidant diphenyl amine is "used". For instance, it the antioxidant added to the polyalphaolefin before hydrogenation to function in a catalytic capacity to achieve a desired level of hydrogenation ? Is it added after the hydrogenation in order to add desirable properties to the final composition?

In claim 26, applicants use the phrase "a Lube Oil Oxidator Level of at least 45 hrs.". The meaning of a Lube Oil Oxidator Level is unclear.

Claim Rejections - 35 U.S.C. § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 13-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Wu et al.(5,276,227).

Applicants are claiming a high oxidative stability polyalphaolefin which has bromine index of less than 200 mg per 100 gram sample of polyalphaolefin. The dependent claims include limitations directed at narrower Bromine Index ranges.

The reference of Wu et al.(5,276,227) discloses a polyalphaolefin with a Bromine number less than 4 (e.g. 0-4). See column 3, lines 50-51. Since the Bromine Index is equal to 1000 times the Bromine Number, the reference of Wu et al.(5,276,227) succeeds in disclosing a polyalphaolefin with a Bromine Index of 0 to 4000 mg of bromine per 100 g.

Since the teachings of the reference encompass polyalphaolefins with Bromine Index ranges less than 200, applicants' polyalphaolefin product is anticipated by the reference of Wu et al.(5,276,227).

In addition, the intended use limitations in claims 17-24 do not carry patentable weight because they do not further limit the physical structure of the claimed composition. It has been held that a recitation with respect to the manner in which a claimed apparatus (composition) is

intended to be employed does not differentiate from a prior art apparatus(composition) that teaches all the structural limitations. Ex Parte Masham, 2 USPQ 2d 1647 (Bd. Pat. App. & Inter. 1987).

Claim Rejections - 35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-8, 10-12 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sauer (3,113,167).

Applicants are claiming a method of making a high oxidative stability polyalphaolefin. The process of making comprises hydrogenating a polyalphaolefin to a level of hydrogenation in which a Bromine Index of less than 200 mg per 100 gram sample of polyalphaolefin is achieved.

In the dependent claims, applicants include limitations directed at an additional distilling step and narrower Bromine Index ranges.

The reference of Sauer (3,113,167) discloses a process for the production of polyalphaolefins. See column 7, lines 43-45. The process involves a distillation step followed by a polymer hydrogenation step. See column 8, lines 43-45.

The reference of Sauer (3,113,167) succeeds at disclosing a process for the production of polyalphaolefins with steps corresponding to applicants' claimed initial distillation step and hydrogenation step.

A difference is noted between applicants' process and the teachings of Sauer (3,113,167). The reference is silent about hydrogenating to a Bromine Index less than 200.

Since the reference does not limit the Bromine Index of the polyalphaolefin product, it would have been obvious to one of ordinary skill in the art at the time the invention was made to hydrogenate to any desired Bromine Index level in the Sauer process, including the Bromine Index range claimed by applicants, because it is within the level of ordinary skill in the art to perform a step in a known process for a period of time to produce a product with a desired property (e.g. a low Bromine Index).

Claim Rejections - 35 U.S.C. § 103

Claims 1-4, 6-12 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cupples et al.(4,282,392).

Applicants are claiming a method of making a high oxidative stability polyalphaolefin. The process of making comprises hydrogenating a polyalphaolefin to a level of hydrogenation in which a Bromine Index of less than 200 mg per 100 gram sample of polyalphaolefin is achieved. In the dependent claims, applicants include limitations directed at an additional distilling step and narrower Bromine Index ranges.

The reference of Cupples et al.(4,282,392) discloses a process for the production of alphaolefin oligomers (e.g. polyalphaolefins). See column 1, lines 11-15. The process involves a hydrogenation step followed by a distillation step. See column 4, lines 4-5 and column 7, lines 20-55. The hydrogenation step is accomplished at pressures between 200 and 2000 psi. See column 4, lines 23-25.

The reference of Cupples et al.(4,282,392) succeeds at disclosing a process for the production of polyalphaolefins with steps corresponding to applicants' claimed hydrogenation and distillation steps.

A difference is noted between applicants' process and the teachings of Cupples et al.(4,282,392). The reference is silent about hydrogenating to a Bromine Index less than 200.

Since the reference does not limit the Bromine Index of the polyalphaolefin product, it would have been obvious to one of ordinary skill in the art at the time the invention was made to hydrogenate to any desired Bromine Index level in the Cupples et al. process, including the Bromine Index range claimed by applicants, because it is within the level of ordinary skill in the

art to perform a step in a known process for a period of time to produce a product with a desired property (e.g. a low Bromine Index).

Claim Rejections - 35 U.S.C. § 103

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cupples et al.(4,282,392) as applied to claims 1-4, 6-12 and 26 are above, and further in view of Wu et al.(5,276,227).

A difference is noted between the reference of Cupples et al.(4,282,392) and applicants' claimed invention. The reference does not disclose applicants' final hydrogenation step in claim 28.

The reference of Wu et al.(5,276,227) similarly discloses a polyalphaolefin composition. See column 1, lines 4-9. The reference further teaches that it is known that products of low unsaturation, as characterized by a low Bromine Number less than 4, are desirable and that a hydrogenation (i.e. saturation) is required if the product has an averaged molecular weight of less than 4000. See column 3, lines 46-55.

The reference of Wu et al.(5,276,227) succeeds in disclosing the concept that hydrogenation is required to obtain a desired level of saturation in alphaolefin oligomers as indicated by a low Bromine Index when the product has a number averaged molecular weight of lower than 4000. The reference's disclosure illustrates that it is within the level of ordinary skill in

the art to select whether or not to perform a hydrogenation step to achieve a desired Bromine Index.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include an additional final hydrogenation step in the process of Cupples et al.(4,282,392) if a final product with a number averaged molecular weight of less than 4000 with a correspondingly high Bromine number is obtained because the reference of Wu et al.(5,276,227) illustrates that it is known to perform a hydrogenation step on a polyalphaolefin oligomer with a low molecular weight in order to obtain a desirable lower Bromine Index. Applicants have not shown anything unexpected by performing an additional step which is known to lower the Bromine number and increase the number average molecular weight to a desired level.

Claim Rejections - 35 U.S.C. § 103

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cupples et al.(4,282,392) as applied to claims 1-4, 6-12 and 26 above and/or claims 1-8, 10-12 and 27 as applied to Sauer (3,113,167) above, and further in view of Van Dyck Fear (2,980,603).

A difference is noted between the references of Cupples et al.(4,282,392) and/or Sauer (3,113,167) and applicants' claimed invention. The references do not disclose the use of diphenylamine as an antioxidant.

The reference of Van Dyck Fear (2,980,603) teaches that diphenyl amine is a known antioxidant additive for lubricating oil. See column 5, lines 44-46.

It would have been obvious to one of ordinary skill in the art desiring to increase the oxidative stability of the lubricating oil produced by the reference of Cupples et al.(4,282,392) and/or Sauer (3,113,167) to add diphenyl amine to the polyalphaolefin product because the reference of Van Dyck Fear (2,980,603) teaches that it is known in the art to add diphenyl amine in order to increase the oxidative stability. Applicants have not shown anything unexpected with respect to adding a known antioxidant in the form of diphenyl amine to prepare an oxidatively stable composition.

Prior Art of Record

The prior art made of record and not relied upon is considered pertinent to applicants' disclosure.

The attached references disclose various polyalphaolefins and methods of making.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nadine Preisch whose telephone number is (703) 305-2667. The examiner can normally be reached on Monday through Thursday from 7:30 am to 6:00 pm.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

September 6, 2000
N.P.

NP

NADINE PREISCH
ART UNIT 1764